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EXAMINER

LE, LANA N

ART UNIT PAPER NUMBER

2618

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,024

Applicant(s)

KANAZAWA ET AL.

Examiner

Lana N. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 is/are allowed.
- 6) ☒ Claim(s) 1-7, 12-14 and 16-18 is/are rejected.
- 7) ☒ Claim(s) 8-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Sekine (US 5,903,822).

Regarding claim 16, Sekine et al disclose a chassis (20, 105) provided inside of a folding type portable radio machine (fig. 41), comprising:

- a first chassis part (20);
- a second chassis part (105); and
- a plurality of connection parts (108, 109) provided at the first chassis part (20), and the second chassis part (105); the connection parts (108, 109) connecting the first chassis part (20) and the second chassis part (105);

wherein only a surface of one of the connection parts (109) at the second chassis part (105) connecting to the one of the connection parts (109) at the first chassis part (20) is made of non-conductive material (high resistance material which is non-conductive) (col 12, lines 13-28).

Regarding claim 17, Sekine et al disclose the chassis (20, 105) provided inside of the folding type portable radio machine as claimed in claim 16, wherein only the one of the connection parts (109) at the second chassis part (105) is made of non-conductive material.

Regarding claim 18, the chassis provided inside of the folding type portable radio machine as claimed in claim 16, further comprising a conductive member forming a designated interval with the second chassis and extending from the vicinity of the one connection part of the second chassis to another connection part of the second chassis.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine et al (US 5,903,822).

Regarding claim 1, Sekine et al disclose a portable radio machine (fig. 51), comprising:

a chassis part (301, 302) formed by a first chassis (301) and second chassis (302), the second chassis (302) being connected to the first chassis (301), wherein the chassis part includes:

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a conductive part (metal bodies 301, 302, 304) having conductivity whose full length is an approximately half wave length ($\lambda/2$) (since length l is $\lambda/4$, the length of the lower half of the portable phone is half of the upper half measuring from the notch and is also $\lambda/4$) of the using frequency of the radio machine, and an electric notch (101) (col 7, lines 35-48; figs. 10, 51). Sekine et al do not disclose a folding type portable radio machine in fig. 10, 51. Sekine et al disclose a folding type portable radio machine and the first chassis (20) being foldably connected to the second chassis (105) (figs. 63A-63B, 41; col 19, lines 20-46). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the portable phone of Sekine et al with the folding phone machine of Sekine in order utilize an alternative type of phone that's more compact by folding of the upper portion into the lower portion of the phone.

Regarding claim 2, Sekine et al disclose the folding type portable radio machine as claimed in claim 1, wherein an antenna (103) is provided at a side of the electric notch (101) (col 7, lines 35-36).

Regarding claim 3, Sekine et al disclose the folding type portable radio machine as claimed in claim 1, wherein the conductive part has a width of an approximately ($\lambda/4$) of the using frequency of the radio machine or shorter (col 9, line 63 - col 10, line 6), and the electric notch (101) has a full length from an approximately one tenth wave length ($\lambda/10$) to an approximately one fourth wave length ($\lambda/4$) of the using frequency of the radio machine ($.25\lambda$; fig. 8) (col 7, lines 15-20).

Regarding claim 4, Sekine et al disclose the folding type portable radio machine as claimed in claim 1, wherein Sekine et al disclose the conductive part is a printed

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board module (304) that is provided inside of the first chassis and the second chassis (col 16, lines 10-29).

Regarding claim 5, Sekine et al disclose the folding type portable radio machine as claimed in claim 1, wherein the electric notch (101) has a width of an approximately one fourth wave length ($\lambda/4$) of the using frequency of the radio machine ($.25\lambda$; fig. 8) (col 7, lines 15-20).

Regarding claim 6, Sekine et al disclose a folding type portable radio machine (fig. 41), comprising:

a first chassis (20) and second chassis (105), the second chassis (105) and being connected to the first chassis (20) by a hinge mechanism part (108, 109) (figures 41, 63), wherein the hinge mechanism part has a part (electric signal wire 108) making the first chassis (20) and the second chassis (105) have an electric continuity state (col 12, lines 13-28) and a part (high resistance wire 109) not making the first chassis (20) and the second chassis (105) have an electric continuity state (col 12, lines 13-28).

Sekine et al (fig. 41) do not disclose the chassis of the folding portable radio machine having conductivity. Sekine et al (fig. 51) disclose the chassis (301, 302) of the portable radio machine having conductivity (col 16, lines 10-23), a full length of the first chassis and the second chassis is an approximately half wave-length ($\lambda/2$) of a using frequency of the radio machine (col 7, lines 35-42; fig. 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have conductivity in the chassis of the folding phone and to measure the length of the first and second chassis as approximately half wavelength in order to vary the distribution of the radio

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frequency current flowing through the housing to reduce its influence to the radiation pattern as suggested by Sekine et al (col 7, lines 44-48).

Regarding claim 7, Sekine et al disclose the folding type portable radio machine as claimed in claim 6, wherein Sekine et al disclose the part (108) making the first chassis and second chassis have the electric continuity state, of the hinge mechanism part, includes a first connection part (connection part to lower chassis 105) provided at a lower part of the first chassis and a second connection part (connection part to upper chassis 20) provided at an upper part of the second chassis, and

a conductor (electric signal wire) is put between the first connection part and the second connection part (fig. 41).

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine et al (US 5,903,822) in view of Itoh (US 5,999,831).

Regarding claim 12, Sekine et al disclose the folding type portable radio machine as claimed in claim 6, wherein Sekine et al do not disclose the machine further comprising an antenna being capable of extending against the second chassis, the antenna being provided at a side of the part not making the first chassis and the second chassis have the electric continuity state, of the hinge mechanism part. Itoh discloses a folding type portable machine (figs. 5, 7) further comprising an antenna (11) being capable of extending against the second chassis (22), the antenna (11) being provided at a side of the part not making the first chassis (21) and the second chassis (22) have the electric continuity state (resistor connection line near antenna 11), of the hinge mechanism part (26) (col 3, lines 31-41). It would have been obvious to one of ordinary

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skill in the art at the time the invention was made to have the antenna extend against the second chassis and provided at a side of the part not making the first and the second chassis in order to provide less deterioration to the radiation efficiency and radiation pattern of the antenna as suggested by Itoh (col 3, lines 8-24).

4. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine et al (US 5,903,822) in view of Itoh (US 5,999,831) and further in view of Matsuda (US 6,314,273).

Regarding claim 13, Sekine et al disclose a folding type portable radio machine (fig. 41), comprising:

- a first housing (102a) having a first chassis (20);

- a second housing (102-b) having a second chassis (105);

- the first chassis and the second chassis are connected by connection parts (108, 109) provided left and right,

- the connection part at the other side electrically connects (via 108) the first chassis and the second chassis (col 12, lines 21-38).

Sekine (fig. 41) do not disclose the first chassis having conductivity where a printed board a printed board is provided inside thereof; the second chassis having conductivity where another printed board is inside thereof. Sekine (figs. 51, 10) discloses the first chassis (301) having conductivity where a printed board (304) is provided inside thereof; the second chassis (302) having conductivity wherein the antenna is fed an electric power supply by a feeder circuit of the other printed board provided at the second

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chassis (col 16, lines 10-29); a full length of the radio machine in a case second housing is an approximately half wave length ($\lambda/2$) of a first using frequency of the radio machine (col 7, lines 35-48; fig. 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the chassis have conductivity to send electric signals from the first chassis to the second chassis and to measure the length of the phone in terms of wavelength in order to vary the distribution of the radio frequency current flowing through the housing to reduce its influence to the radiation pattern as suggested by Sekine et al (col 7, lines 44-48) and to have the chassis have conductivity to send electric signals from the first chassis to the second chassis via the electric wires of Sekine et al of fig. 41.

Sekine et al do not disclose the connection part at the side where the antenna is positioned non-electrically connects the first chassis and the second chassis, and an antenna being extendable to a back surface of the first housing, the antenna being provided at one of left and right sides of the second housing. Itoh discloses the connection part at the side where the antenna is positioned non-electrically connects (via resistor near antenna; figs. 5, 7) the first chassis and the second chassis, and an antenna (11) being extendable to a back surface of the first housing (21), the antenna being provided at one of left and right sides of the second housing (col 3, lines 31-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide less deterioration to the radiation efficiency and radiation pattern of the antenna as suggested by Itoh (col 3, lines 8-24).

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Sekine et al and Itoh do not disclose a printed board provided on the inside surface of the second chassis. However, it is well known and notoriously old to have a printed board provided on the inside surface of the second chassis and a printed board provided on the inside surface of the second chassis as shown by Matsuda. Matsuda discloses another printed board (23; figs. 3, 4) in addition to a first board (22) provided on the inside surface of the second chassis (15) (col 6, lines 20-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have another printed board to lay out the circuitry (i.e. transmit, receive, power supply) of the lower portion of the folding phone of Sekine et al.

Regarding claim 14, Sekine et al and Itoh disclose the folding type portable radio machine as claimed in claim 13, wherein Sekine et al and Itoh do not disclose the first chassis is electrically connected to an earth conductor pattern of the printed board provided at the first chassis and the second chassis is electrically connected to an earth conductor pattern of the printed board provided at the second chassis. Matsuda discloses the first chassis (6) is electrically connected to an earth conductor pattern (12) of the printed board (22) provided at the first chassis (12b) and the second chassis is electrically connected to an earth conductor pattern (13) of the printed board provided at the second chassis (col 6, lines 20-31; figs. 3, 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have earth conductor to ground the control circuit being continuous with the first earth conductor.

Allowable Subject Matter

5. Claims 8-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 8, Sekine et al disclose the folding type portable radio machine as claimed in claim 6, wherein Sekine et al and the cited prior art do not disclose a length between the part making the first chassis and the second chassis electric have the continuity state and the part not making the first chassis and the second chassis have the electric continuity state is an approximately one fourth wave length ($\lambda/4$) of the using frequency of the radio machine.

Regarding claim 9, Sekine et al disclose the folding type portable radio machine as claimed in claim 6, wherein Sekine et al and the cited prior art do not disclose wherein a conductive member extends from the part making the first chassis and the second chassis have the electric continuity state to the part not making the first chassis and the second chassis electric have the continuity state, and forms a designated intervals with the second chassis.

Regarding claim 10, Sekine et al disclose the folding type portable radio machine as claimed in claim 6, wherein Sekine et al and the cited prior art do not disclose the folding type portable radio machine further comprising a coaxial line connecting the first

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chassis and the second chassis, the coaxial line having a length of the approximately half wave length ($\lambda/2$) of the using frequency of the radio machine.

6. Claim 15 is allowable over the cited prior art.

7. The following is an examiner's statement of reasons for allowance:

Regarding claim 15, Sekine et al (fig. 41) disclose a folding type portable radio machine, comprising:

a first housing (102a) having a first chassis (20);

a second housing (102-b) having a second chassis (105);

the first chassis and the second chassis are connected by connection parts (108, 109) provided left and right,

the connection part at the other side electrically connects (via 108) the first chassis and the second chassis (col 12, lines 21-38).

the second connection part (109) does not electrically connect the first chassis and the second chassis.

Sekine (fig. 41) do not disclose the first chassis having conductivity where a printed board a printed board is provided inside thereof; the second chassis having conductivity where another printed board is inside thereof. Sekine (figs. 51, 10) discloses the first chassis (301) having conductivity where a printed board (304) is provided inside thereof; the second chassis (302) having conductivity wherein the antenna is fed an electric power supply by a feeder circuit of the other printed board provided at the second

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chassis (col 16, lines 10-29); a full length of the radio machine is an approximately half wave length ($\lambda/2$) of a first using frequency of the radio machine (col 7, lines 35-48).

Sekine et al, Itoh and the cited prior art do not disclose:

an interval between the first connection part second connection part is an approximately one fourth wave length ($\lambda/4$) of a second using frequency of the radio machine; and

the first chassis, the second chassis, the first connection part, and the second connection part, as an installed antenna of the radio machine, send and receive radio waves having the first second using frequencies.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lana N. Le whose telephone number is (571) 272-7891. The examiner can normally be reached on M-F 9:30-18:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on (571) 272-7899. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lana Le

Lana N. Le
04-03-06
LANA LE
PRIMARY EXAMINER